

is an illustration of our author's lucid and, at the same time, thorough treatment of his subject. The various affections are treated of also from an advanced modern standpoint; conflicting theories and passing observations are submitted to a wise criticism through which the author's own large and varied experience is very apparent.

An attractive aspect of the work is the excellent character of the illustrations, which, as they are in great part original, will be a pleasing relief to the hackneyed cuts which have for so long passed from book to book in English works.

Pursuing the *via media* in the important question of treatment, neither displaying the pessimism which too many maladies of the nervous system would seem to justify, nor an optimism so flagrant as to savor of quackery, Prof. Hirt is a safe guide in the highways and byways of neurotherapeutics.

And, lastly, I think the author has been fairly handled by his translators, who, bearing in mind the admonition of Dryden, "not to lackey by the side of his author, but to mount up behind him," have given a clear and interesting rendering of the original.

WILLIAM OSLER.

BALTIMORE.

CONTENTS.

	PAGE
DISEASES OF THE BRAIN AND ITS MENINGES, INCLUDING THOSE OF THE CRANIAL NERVES	I
PART I.	
DISEASES OF THE MENINGES OF THE BRAIN	3
Chap. I.—Inflammation of the inner surface of the dura mater, pachymeningitis interna hæmorrhagica, hæmatoma duræ matris	4
II.—Inflammations of the soft membranes of the brain, leptomeningitis, purulent meningitis	8
PART II.	
DISEASES OF THE CRANIAL NERVES	24
Chap. I.—Diseases of the olfactory nerve	25
II.—Diseases of the optic nerve	29
III.—Diseases of the nerves supplying the ocular muscles	42
IV.—Diseases of the trigeminal nerve	56
V.—Diseases of the facial nerve	77
VI.—Diseases of the auditory nerve	95
VII.—Diseases of the glosso-pharyngeal nerve	107
VIII.—Diseases of the vagus (pneumogastric nerve)	110
IX.—Diseases of the accessory nerve	136
X.—Diseases of the hypoglossal nerve	140
XI.—Simultaneous affection of several cranial nerves—Multiple paralysis of the cranial nerves	147
PART III.	
DISEASES OF THE BRAIN PROPER	161
I. The study of cerebral lesions with reference to their seat—Topical diagnosis—Doctrine of localization	162
Symptoms referable to cortical lesions	164
Symptoms referable to lesions of the white matter of the hemispheres and to lesions of the basal ganglia	189
II. The study of cerebral lesions with reference to their pathological nature—Pathological diagnosis	209
Affections of the brain due to disease of the blood-vessels	209
A. Diseases of the cerebral vessels and their consequences	209

	PAGE
1. Cerebral hæmorrhage	213
2. Embolism and thrombosis of the cerebral arteries—Encephalomalacia	244
3. Endarteritis (syphilitica)	252
4. Dilatation of the arteries of the brain	253
5. The neuroses of the arteries of the brain (anæmia and hyperæmia of the brain)	254
B. Diseases of the cerebral veins and sinuses	257
Inflammatory processes of the brain substance	260
1. Purulent encephalitis—Brain abscess	260
2. Nonsuppurative encephalitis and its consequences ("athetosis")	266
A. In adults	266
B. In children—Cerebral palsy of children—Hemiplegia infantilis spastica—Polio-encephalitis	268
Brain tumors	283
Appendix—Parasites of the Brain	305
Congenital diseases—Hydrocephalus—Meningocele—Porencephaly—Absence of certain parts of the brain	308
 DISEASES OF THE SPINAL CORD	 314
PART I.	
DISEASES OF THE SPINAL MENINGES	315
Chap. I.—Inflammations of the dura mater—Pachymeningitis spinalis	316
II.—Inflammations of the soft spinal meninges—Leptomeningitis spinalis	322
III.—Hæmorrhage into the spinal membranes—Meningeal apoplexy—Pachymeningitis interna hæmorrhagica	326
PART II.	
DISEASES OF THE SPINAL NERVES	330
A. Diseases of the motor and sensory nerves	332
I. Diseases of the cervical nerves	332
Chap. I.—Lesions of the cervical plexus	336
II.—Lesions of the brachial plexus	340
II. Diseases of the dorsal nerves	363
III. Diseases of the lumbar nerves	366
IV. Diseases of the sacral and coccygeal nerves	370
V. Neuritis involving several spinal nerves at the same time—Multiple neuritis	387
B. Diseases of the trophic and vaso-motor nerves	397
Appendix—Diseases of the muscles—Primary myopathies	405
PART III.	
DISEASES OF THE SUBSTANCE OF THE SPINAL CORD	418
I. Consideration of spinal diseases with reference to their seat—Topical diagnosis	418
1. Lesions of the gray matter—Poliomyelitis	425
Chap. I.—Poliomyelitis anterior acuta—infantile spinal paralysis	426
II.—Atrophia muscularis progressiva spinalis—Progressive muscular atrophy	434

	PAGE
II. Lesions of the white matter of the spinal cord—Leucomyelitis	439
A. Primary lesions of the white columns	440
B. Secondary lesions of the white columns	445
III. Lesions of the gray and white matter of the spinal cord	446
II. Spinal lesions regarded from their pathological aspect—Pathological diagnosis	458
I. Affections of the spinal cord due to diseases of the blood-vessels	458
A. Diseases of the arteries of the spinal cord and their consequences	458
1. Spinal hæmorrhage—Hæmorrhagia (or apoplexia) medullæ spinalis—Hæmatomyelia	458
2. Embolism and thrombosis of the spinal arteries and myelomalacia	460
3. Endarteritis (syphilitica)	461
4. Dilatation of the spinal arteries	462
5. Neuroses of the spinal arteries	462
II. Inflammatory processes in the substance of the spinal cord	465
1. Purulent myelitis—Abscess of the spinal cord	465
2. The non-purulent myelitis	465
A. The acute form	465
B. The chronic form	467
III. Spinal tumors	467
Appendix—Parasites of the spinal cord	470
IV. Congenital diseases—Hydrorrhachis—Spina bifida	471
 DISEASES OF THE GENERAL NERVOUS SYSTEM	 476
PART I.	
DISEASES OF THE GENERAL NERVOUS SYSTEM WITHOUT ANY RECOGNIZABLE ANATOMICAL BASIS—"FUNCTIONAL NEUROSES"	479
First Group.—Neuroses which are wont to run their course without any essential implication of the general organism	481
A. Affections in which the motor nerves are chiefly implicated	481
Chap. I.—Chorea—Chorea Sancti Viti—St. Vitus' dance—Ballismus—Melancholia saltans—Sydenham's disease	481
II.—Tetany—Tetanilla—Tetanus intermittens	493
Thomsen's disease	496
III.—Paralysis agitans—Shaking palsy—Parkinson's disease—Chorea procursiva	500
B. Affections in which the sensory nerves are chiefly implicated	507
Migraine—Hemicrania	507
C. Affections in which the trophic nerves are chiefly implicated	512
1. Acromegaly	512
2. Osteoarthropathy	516
Appendix	
1. Graves' disease—Basedow's disease—Exophthalmic goitre	518
2. Myxœdema	525
Second Group.—Neuroses in which the entire organism is more or less severely implicated	529
Chap. I.—Neurasthenia—Nervous prostration	529
II.—Hysteria	539

	PAGE
III.—Epilepsy—Falling sickness—Morbus sacer—Morbus comitalis	571
IV.—Hystero-epilepsy—Major hysteria—Hypnotism—Treatment by suggestion	600

PART II.

DISEASES OF THE GENERAL NERVOUS SYSTEM WITH KNOWN ANATOMICAL BASIS		616
Chap. I.—Multiple sclerosis—Disseminated sclerosis—Insular sclerosis— <i>Sclérose en plaques</i> —Sclerosis cerebro-spinalis disseminata sive multiplex		616
II.—Tabes dorsalis—Locomotor ataxia—Posterior spinal sclerosis—Leuco-myelitis posterior chronica		629
III.—Dementia paralytica progressiva—General paralysis of the insane—General paresis—Softening of the brain		688
IV.—Syphilis of the general nervous system		700

LIST OF ILLUSTRATIONS.

FIG.	PAGE
1. Cross-section through the cerebral cortex and its membranes	4
2. Diagram showing the course of the optic fibres in the chiasm	29
3. Diagram showing the origin of the optic nerve (after Wernicke)	31
4. Field of vision of the left and right eye (after Förster)	37
5. Field of vision of the left and right eye in left-sided hemianopia (after Gowers)	37
6. Cross-section through the region of the ant. corpora quadrigemina	42
7. Diagrammatic longitudinal section through the pons with the nuclei of the ocular nerves (after Gowers)	43
8. Cross-section through the region of the tegmentum (after Schwalbe)	44
9. Cross-section through the pons (after Schwalbe)	45
10. Nuclei of the trigeminal nerve (after Schwalbe)	57
11. Cross-section through the medulla oblongata (after Schwalbe)	58
12. Distribution of the sensory cutaneous nerves on the head	74
13. Diagram showing the course of the facial fibres in the pons (after Schwalbe)	78
14. Diagram showing the decussation of the fibres going to the extremities, and those going to the face, in the pons and medulla oblongata	84
15. Erb's diagram for facial paralysis	87
16. Some of the so-called "motor points" on the face and neck	93
17. Diagrammatic section through the medulla oblongata in the region of the (lower) olive	96
18. Cross-section through the medulla oblongata (after Schwalbe)	111
19. Bilateral paralysis of the recurrent laryngeal	117
20. Recurrent laryngeal paralysis	117
21. Paralysis of the recurrent laryngeal on the left side	117
22. Paralysis of both posterior crico-arytenoids	117
23. Paralysis of the right post. crico-arytenoid	117
24. Paralysis of both internal thyro-arytenoids	117
25. Paralysis of both internal thyro-arytenoids	117
26. Cross-section through the cervical cord	136
27. Superficial origin of the cranial nerves	141
28. Cortical centres of the left hemisphere (after Gowers)	142
29. Hemiatrophia linguæ	143
30. Hemiatrophia linguæ	144
31. Pharyngeal and laryngeal electrode with arrangement for making and breaking the current (after Erb)	149
32. Facial expression in progressive bulbar paralysis (Leyden, Eichhorst)	154
33. Cross-section through the upper portion of the medulla oblongata	156
34. The posterior (dorsal) aspect of the medulla oblongata	157

FIG.	PAGE
35. Right hemisphere (after Exner)	166
36. Left hemisphere (after Exner)	166
37. Convolutions and fissures of the lateral aspect of the brain (after Ecker)	167
38. Convolutions and fissures at the base of the brain (diagrammatically, after Ecker)	168
39. Diagram illustrating method of determining the location of the fissure of Rolando	169
40. Convolutions and fissures of the median aspect of the brain	170
41. Convolutions of the island of Reil (J. R.) made visible by removing the operculum	170
42. Topographical relations between the exterior of the skull and the surface of the brain (after Ecker)	171
43. Wernicke's schema for the cortical mechanism of speech	175
44. 45. Lichtheim's schema illustrating the seven different forms of aphasia	179
46. Diagram showing the direct system of fibres (Flechsig, Mendel)	184
47. Course of the fibres from the internal capsule to the crus cerebri (diagrammatic, after Wernicke and Edinger)	189
48. View of the ventricles on horizontal section (after Edinger)	190
49. Horizontal section through the brain, about a finger's breadth below that represented in Fig. 48 (Edinger)	191
50-53. So-called "frontal sections" through the brain (after Edinger)	192, 193
54. Points at which the Pitres-Nothnagel sections are made	194
55-60. Pitres-Nothnagel sections	195-197
61. Diagrammatic cross-section through the anterior corpora quadrigemina (after Edinger)	200
62. Longitudinal section through the region of the corpora quadrigemina of a human foetus twenty-eight weeks old (after Edinger)	201
63. Diagrammatic horizontal section through the decussation of the superior peduncles of the cerebellum (after Edinger)	201
64. Sagittal section through pons and medulla oblongata (after Mendel)	202
65. Cross-section through the region of the ant. corpora quadrigemina	203
66. Diagram showing the decussation of the fibres going to the extremities, and of those going to the face, in the pons and medulla oblongata	204
67. The connections of the cerebellum	207
68. Diagram showing the circle of Willis	210
69. The cortical distribution of the middle cerebral artery (after Charcot)	211
70. Frontal section through the cerebral hemispheres, one centimetre behind the chiasm	212
71. Cerebral artery from an apoplectic focus (after Cornil and Ranvier)	213
72. Miliary aneurism of a small artery of the lenticular nucleus (after Marchand)	214
73. The large head electrode (covered with sponge) of Erb	241
74. Porencephaly	267
75. Hemiatrophy of the left side of the body, front	274
76. Hemiatrophy of the left side of the body, back	275
77. Hemiatrophy of the left side of the body from traumatism	276
78. Hemiatrophy of the left side of the body from traumatism	277
79. Atrophy of the left upper and lower extremity	278
80. The family form of spastic paraplegia (after Newmark)	279
81. Atrophy of paralyzed side	280
82. Atrophy of paralyzed side; contracture of wrist	281
83. Atrophy of paralyzed side; contracture of ankle	282
84. Atrophy of paralyzed side; contracture of ankle	283

FIG.	PAGE
85. Convulsive movements of the extremities	285
86. Glioma telangiectaticum (after Ziegler)	289
87. Papillary carcinoma in the third ventricle (after Ziegler)	291
88. Cysticercus racemosus (after Marchand)	305
89. Hydrocephalus	309
90. Cross-section through the vertebral column and the spinal cord (diagrammatical) (after Eichhorst)	316
91. Cross-section through the middle of the cervical enlargement in pachymeningitis cervicalis hypertrophica (after Charcot)	317
92. Position of the hand in pachymeningitis cervicalis hypertrophica (Charcot)	319
93. Diagrammatic outline of the cervical and brachial plexuses (after Schwalbe)	333
94. Case of right-sided serratus paralysis in a man thirty-five years of age (after Eichhorst)	341
95. The same case with the arms raised	342
96. Position of the head in spasm of the splenius capitis on the right side	343
97. Musculo-spiral paralysis	344
98. Motor points of the musculo-spiral nerve and the muscles supplied by it	347
99, 100. The distribution of the cutaneous nerves of the arm and hand (after Eichhorst)	348
101. Distribution of the sensory nerves on the back of the fingers (Krause)	349
102. Motor points of the median nerve and the muscles supplied by it	350
103. Motor points of the ulnar nerve and the muscles supplied by it	350
104. Motor points of the ulnar nerve	351
105. Claw-hand (after Duchenne)	352
106. Motor points of the musculo-cutaneous nerve and the muscles supplied by it	352
107. Motor points of the brachial plexus; Erb's supraclavicular point	355
108-111. The manner in which a child whose erectores spinæ are paralyzed gets up from the ground (after Gowers)	366
112. Diagrammatic outline of the lumbar and sacral plexuses	367
113, 114. Areas of distribution of the cutaneous nerves of the lower extremity (after Henle)	368
115. Motor points for the nerves and muscles of the anterior surface of the leg	382
116. Motor points for the sciatic nerve and the muscles supplied by it	383
117. Case of peripheral neuritis of the sciatic nerve, with shortening and atrophy of the affected extremity	384
118. Case of peripheral neuritis of the sciatic nerve, with shortening and atrophy of the affected extremity	385
119, 120. Contracture in the quadratus lumborum	386
121. Atrophy of the muscles of the right upper arm in consequence of a fracture of the humerus seven years previously	389
122, 123. Panarthritides with secondary multiple neuritis	390, 391
124. Hemiatrophia facialis	404
125. So-called juvenile muscular atrophy (Erb)	407
126. Juvenile muscular atrophy (Erb)	408
127. Juvenile muscular atrophy (Erb)	409
128. Juvenile muscular atrophy (Erb)	410
129. Progressive atrophic myopathy (after Marie et Guinon)	411
130. Pseudo-hypertrophy of the muscles of the legs, with atrophy of the muscles of the back (after Duchenne)	413
131. Absence of the forearms	414
132. The relations of the origin of the nerves to the bodies of the vertebræ and the spinous processes (after Gowers)	519

FIG.	PAGE
133. Scheme of the conducting paths in the spinal cord at the level of fifth dorsal nerve (after Flechsig)	420
134. Cross-section through the spinal cord at different levels (after Quain)	420
135. Reflex arc	421
136. Transverse section from the cervical portion of the spinal cord (after Charcot)	426
137. Spinal infantile paralysis	427
138, 139. Progressive muscular atrophy (after Eichhorst)	435
140, 141. Progressive muscular atrophy	436, 437
142. Friedreich's disease (after Chauffard)	443
143. Ascending and descending degeneration in the spinal cord (after Gowers)	446
144. Secondary ascending and descending degeneration in a transverse affection of the upper dorsal cord (after Strümpell)	446
145, 146. Complete interruption of conduction of the spinal cord during life (after Eichhorst)	454
147. Schema of the course of the nerve fibres in the spinal cord (after Brown-Séquard)	457
148, 149. Thomsen's disease (after Mills)	497, 498
150, 151. Specimens of handwriting of patient with paralysis agitans	501, 502
152. Position of hands and fingers in paralysis agitans (after Eichhorst)	503
153. Position of the body in paralysis agitans	504
154. Enlargement of jaw in acromegaly (after Marie)	512
155. Case of acromegaly (after Marie)	513
156. Case of acromegaly (after Buchwald)	514
157. Osteoarthropathy (after Rauzier)	516
158. Osteoarthropathy (after Spillmann and Haushalter)	517
159. Graves' disease	519
160. Myxœdema (after Charcot)	526
161. "Idiotie myxœdémateuse"	527
162, 163. Hysterical muscular atrophy	546, 547
164. Specimen of handwriting in a case of multiple sclerosis	617
165. Specimen of handwriting illustrating alcoholic tremor	622
166. Specimen of handwriting illustrating tremor senilis	623
167. Specimen of handwriting of a patient with mercurial tremor	624
168. Specimen of handwriting illustrating the tremor produced by the combined action of alcohol and mercury	625
169. Cross-section through the cervical enlargement of the spinal cord in a case of multiple sclerosis (after Bramwell)	626
170. Hemiatrophy of the tongue in an otherwise perfectly healthy child	637
171. Specimen of handwriting in a case of tremor in tabes	643
172. Two cases of tabes (after Westphal)	649
173. A case of Charcot's joint in a tabetic	654
174. Erosion of the head of the humerus in tabes dorsalis (after Charcot)	656
175. Normal humerus (after Charcot)	656
176. Skeleton of a tabetic foot (after Charcot)	657
177. Plantar flexion of the toes in the course of tabes	661
178. Section through the cervical cord in a case of commencing tabes (after Strümpell)	673
179. Section through the lumbar cord in tabes (after Strümpell)	973
180. Section through the cervical cord in a case of advanced tabes (after Strümpell)	673
181. Suspension apparatus used in the treatment of tabes	685

DISEASES OF THE BRAIN AND ITS MENINGES, INCLUDING THE CRANIAL NERVES.

THE study of brain diseases, we must confess, has not made the strides that might have been expected after the numerous and varied researches that the last decades have seen. For this our present very imperfect knowledge of the anatomy, and still more our doubts as to the physiological functions of the different parts of the brain must be held largely responsible. The structure as well as the physiological functions of the human brain are, up to the present time, so little understood that we are far from having any sure basis upon which to lay the foundations of a cerebral pathology. No small progress has been made from an anatomical standpoint through Stilling's method of serial sections, a method which Meynert, Henle, Wernicke, and others have not been slow to use, in their admirable researches, to which important additions have been made by the embryological studies of Flechsig, and by the method of "arrested development" used by Gudden and his pupils (atrophy method; *Degenerationsmethode*, Schwalbe); but with all this we have only here and there single stones which we have not as yet been able to combine for the construction of a harmonious whole. Brilliant from a physiological standpoint as was the discovery of Fritsch and Hitzig (1870) of the electrical irritability of the cortex, and of the existence of motor regions therein, unexpected as were the results which the experimental method of Munk brought to light, extraordinary and interesting as are the conclusions based upon the clinical and post-mortem observations of Charcot and his school—all these, wide-reaching and admirable as they were, are far